POSSIBLE CHINOOK SALMON MANAGEMENT ALTERNATIVE ON THE SOUTH FORK OF THE SALMON RIVER

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INTRODUCTION

During the period of time the aquatic environment of the South Fork of the Salmon River (SFSR) was in a relatively pristine condition, the drainage had the distinction of being the single largest contributor of summer-run chinook in the Columbia River drainage. The SFSR was also a major producer of summer steelhead with fish in the 20 pound class being not uncommon. During the early 1960's, the drainage supported about 10,000 days of angler use on summer chinook with a sport harvest of up to 3,000 fish. At this time the total run was estimated at about 10,000 chinook. The drainage contained numerous good fishing holes and the camping areas were numerous and attractive. The bulk of the chinook anglers were Treasure Valley residents. The spring steelhead fishing participants were more local in nature.

Accelerated logging and road building activity in the 1950's and early 1960's caused a steadily mounting degradation of the aquatic environment on the main stem of the SFSR. The winter floods of 1964-65 rang the death knell on the production of anadromous fish in the drainage sufficient to support a fishery. Coupled with the deterioration of the aquatic habitat on the SFSR, was the accelerated construction of dams on the lower Snake and Columbia Rivers. These dams increased the upriver, as well as the downriver passage problems and were a contributing factor in the decline of anadromous fish in the entire Salmon River drainage. Nowhere, however, was the decline so drastic as on the SFSR. From a run of about 10,000 summer chinook in the late 1950's and early 1960's, production declined to about 1,500 fish in 1968. The fishing season on the SFSR was closed in 1965 and with the exception

a spring harvest of about 100 fish in 1968, has remained closed to the present day.

UPPER RIVER CONDITIONS

Platts estimated that 92,000 cubic yards of sediments entered the SFSR during 1967. About three-quarters of these sediments were accelerated erosion from man's activities in the drainage, including logging and road building. The remainder of the sediments were termed "natural", from the mountain slopes and stream channels. Since 1964, only minor timber sales have been made in the SFSR and many miles of roads have been closed to vehicles and seeded with grass. As a result of these actions, the aquatic environment has shown steady improvement. Presently, the sediments are probably at or near the level prior to the 1964-65 floods.

LOWER RIVER CONDITIONS

The ~~number of~~ dams on the Columbia and lower Snake Rivers that fish destined for Idaho must surmount, now number seven. As each dam was added, fish passage and survival problems increased. The peak of adversity for Idaho salmon and steelhead in the lower river areas, probably was reached in 1971. Since 1971, great strides have been made in reducing spill and nitrogen supersaturation in the lower river areas. Experiments are also being conducted in collecting and transplanting downstream migrants from the upper dams to below the lowermost dam. Survival of transported and untransported fish shows promising results for the program. ~~As yet~~ It is yet unknown what the effect will be of these pools on water temperatures in the lower Snake and Columbia Rivers. During some years, summer chinook have suffered mortalities, and delays because of high water temperatures at the mouth of Snake River. This problem could be further increased with the most recent dams on the lower Snake River.

ANADROMOUS FISH PRODUCTION IN SFSR

NATURAL PRODUCTION – As long as a sufficient number of spawners reach the SFSR, smolt production will increase in response to the improving of aquatic habitat conditions. The reduction in nitrogen levels on the lower river will also have a favorable effect on smolt survival from the drainage. Whether production will increase to the levels prior to 1965 is speculative. If the runs increase to previous levels, it is likely these increases will be reflected through several life cycles. Therefore, it is anticipated it would be eight years or longer before the populations would increase to fishable levels.

HATCHERY PRODUCTION = The fastest way to net fishable populations of anadromous fish in the SFSR is through hatchery production. Providing the downriver influences are no more detrimental to summer-run than to spring-run chinook, the production should be of the native stock. We could utilize the holding pond facilities in Stolle Meadows for the egg taking operation. Several alternatives exist for the smolt rearing phase. We can use existing hatchery space, construct new hatchery facilities, or construct a rearing pond in Stolle Meadows. If smolts are to be hauled into the SFSR in the spring, arrangements can be made with the county to have the road plowed when we wish. Presently the road is plowed each year in April or early May.

Should both upriver and downriver migrant summer-run chinook continue to suffer greater mortalities in the lower river complex, we should use excess Rapid River stock for smolt production in the SFSR. The egg-taking, rearing operation could be identical with that proposed for summer-run production, other than initially the eggs would be obtained at Rapid River Hatchery. Subsequent generations could be trapped at the Stolle Meadows weir.

Several interesting arguments can be made regarding the question of introducing spring chinook or staying with the native summer chinook for hatchery production. In considering fishing regulations under summer chinook

production, the season logically should be similar to the season prior to the depletion of the run. At that time, the season commenced July 20 in order to allow sufficient escapement into the upriver areas. If the hatchery stock returned early, we could have a season to coincide with their migration and prevent overharvest ~~on~~ of the wild fish. On the other hand, if their migration was similar to the wild stock, we could either overfish this stock or not be able to fish the hatchery stock sufficiently to remove the surplus.

In 1968 the timing of the run at the SFSR weir peaked the end of July. In prior years the run peaked about the middle of July. With spring chinook hatchery production, we could fish the entire month of June and the first part of July and affect only a minor fraction of the native stock.

Throughout the Pacific Northwest a similar problem exists at nearly all anadromous fish hatcheries which have surplus production. The question has become one of obtaining an adequate harvest of the surplus production without placing undue pressure on the native stocks. In areas where this problem can arise, a hatchery stock should be selected which exhibits a migration patter as ~~differently~~ dissimilar as possible from the native runs. In this way, regulations can be set to obtain a sufficient harvest on the surplus hatchery production without further endangering the wild runs.

POSSIBLE MANAGEMENT ALTERNATIVES ON SFSR:

1) Closed season until such a time as the runs increase naturally to the levels prior to 1965.
2) Have an immediate fishing season similar to that prior to 1965.
3) Have a season on jack salmon only, less than 24” long (some past runs have been comprised of over 50 per cent jacks.)
4) Supplemental hatchery production of the native summer-run stock, with a fishing season one year after the first smolt releases.
5) Introduction of spring-chinook stock from Rapid River Hatchery, with a fishing season one year after the first smolt releases.

I recommend that those of us concerned with salmon management of the SFSR, get together in the near future and decide what our objectives are on this very important drainage. Perhaps other considerations have been overlooked in this report. IF SO, the meeting could bring this out and would assist us in formulating plans for the future of the South Fork of the Salmon River.

TW/hq

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DEPARTMENT MEMO DATE: May 5, 1972

Norrie, Cons. Officer TO: Tom Welsh, Reg. Fisheries Biol.

Summer Chinook Mgt. on SFSR CC: Tom Reinecker, Reg. Cons. Officer

Because of the short time I have had this memo from Tom Welsh, I have not had much time to study it, so my comments will admittedly be hurried. However, some of my thoughts on the subject appear below. I will take your possible management alternatives listed in your memo and comment on them one at a time.

1. This would take too long, as you have pointed out in your memo. A minimum of 8 years to reach fishable numbers is a long time. If there are other methods of reaching a fishable surplus without endangering the native stock, I certainly feel we should explore them first.

2. I strongly feel that under the present circumstances on the SFSR we cannot even consider a fishing season on our summer-run fish. Our first responsibility is to the resource, and I feel we would be neglecting our responsibility if we allowed fishing on the summer chinook in the SFSR at the present time. (Our second responsibility is to provide angling recreation on the SFSR, but only if we do not endanger the resource in any way.)

3. This suggestion is probably feasible from a biological standpoint, but the inherent enforcement problems are a distinct disadvantage and must be considered. By allowing angling on the summer-run jacks, some adults will certainly be caught inadvertantly by the anglers. They will either illegally keep these fish, in which case they are lost, or they will throw them back. I feel that these fish are at the end of their physical resources by the time they have come this far, and harassment of this nature is needless and detrimental, and will probably contribute to mortality on this species--mortality which the population certainly cannot bear.

4. This seems to me to be the best alternative. We have hatchery know-how and facilities available. Also, we have a holding pond at Stolle Meadows, right where it is needed. All we lack is a program to be developed and direction to implement that program to stock native summer-run Chinook to the SFSR. I realize that there is a problem of obtaining an adequate harvest of the stocked fish, while not adversely affecting the native stock. If this problem proves insurmountable, then I feel we should go to alternative #5--stocking spring-run fish in the SFSR.

5. This would be my second choice of alternatives. If we are unable to remedy and solve the problems inherent in a stocking program with summer Chinook, then we should try spring-run Chinook.

One other factor should be considered with these last two alternatives. the river system is clearing itself. The speed at which this occurs, and the subsequent increase in aquatic habitat for the native stock shall be closely monitored, for it may be important in helping us to decide which program to pursue.